

CLAIMS

1. A method of conducting service on a wind turbine after the wind turbine is erected and after the hub of the wind turbine is mounted
5 on the main shaft of the wind turbine, said method comprising the steps of:

mounting of servicing equipment including a crane on the hub of the wind turbine, and

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lowering and hoisting wind turbine appliances from and to the hub with said hub mounted servicing equipment including a crane.

2. A method according to claim 1, where the servicing equipment is
15 mounted to the outside surface of the hub, and where appliances to be lowered from and hoisted to the hub is capable of being lowered and hoisted to the hub at a front of the hub.

3. A method according to claim 1 or claim 2, where the servicing
20 equipment is mounted by means of already available holes, said holes formerly used for hoisting the hub to the main shaft of the wind turbine.

4. Equipment for servicing a wind turbine after the hub of the wind
25 turbine has been mounted, said equipment being provided with

means for primarily securing the equipment including a crane to the hub, and

said crane lowering and hoisting wind turbine appliances from and to the hub.

5. Equipment according to claim 4, said equipment being provided with fastening means, preferably bolts, for securing the equipment to already available holes, said holes formerly used for hoisting the hub to the main shaft of the wind turbine.

6. Equipment according to claim 5, where the equipment is provided with a first connecting piece intended for being secured to a first set of already available holes.

7. Equipment according to claim 5 or 6, where the equipment is provided with a second connecting piece intended for being secured to a second set of already available holes.

8. Equipment according to claim 6 or 7, where the first connecting piece is intended primarily for securing a crane, constituting part of the equipment, to the hub.

9. Equipment according to any of claims 4-8, where the second connecting piece is intended primarily for securing a gangway, constituting part of the equipment, to the hub.

10. Equipment according to any of claims 4-9, where said connecting piece for connecting the hub with the remainder of the equipment being provided with primary holes for inserting bolts to be secured to the existing holes in the hub and thereby securing the connecting piece to the hub, and said connecting piece also being provided with

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secondary holes for inserting bolts for securing the remainder of the equipment to the connecting piece.

11. Equipment according to claim 10, where a cavity is formed in a
5 bottom of the connecting piece, said cavity being intended for containing a cement-like substance when the connecting piece is secured to the hub.

12. Equipment according to claim 11, where the cavity is delimited by
10 a collar extending circumferentially along the bottom of the connecting piece, and said collar limiting any flow from the cavity of the cement-like substance.

13. Equipment according to any of the claims 10-12, where the
15 connecting piece, preferably the collar of the connecting piece, is provided with means for releasing the adherence by the cement-like structure of the connecting piece to the hub.

14. Equipment according to any of the claims 11-13, where the cavity
20 is delimited by a disc-like member extending inside the connecting piece, and said disc-like member limiting any flow from the cavity of the cement-like substance.

15. Equipment according to any of the claims 10-14, where the
25 connecting piece comprises a flange extending circumferentially along the connecting piece, said flange being provided with means for securing the remainder of the equipment to the connecting piece.

16. Equipment according to claim 10 and claim 14, where the
30 connecting piece is provided with an upper disc-like member and

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where guiding liners for bolts extend between the upper disc-like member and the lower disc-like members.

17. Equipment according to any of the claims 10-16, where the
5 guiding liners are positioned relative to each other in the connecting piece corresponding to a positioning of already available holes in the hub of the wind turbine.

18. Equipment according to any of the claims 8-17, where said crane
10 being provided with primary holes for inserting bolts for securing the crane to the connecting piece and thus to the hub.

19. Equipment according to claim 18, where the crane is provided
15 with a jib connected to a mast of the crane, and said jib being swivable around a substantially vertical hinged connection and said jib extending outwards in relation to the mast and forwards in relation to a direction being a forwards direction of the wind turbine when the crane is secured to the hub.

20. Equipment according to claim 19, where links are provided
20 between the mast and the hinged connection, said links extending outwards in relation to the mast and forwards in relation to a direction being a forwards direction of the wind turbine when the crane is secured to the hub.

21. Equipment according to claim 20, where the links have a greater
25 dimension at an end where the links are attached to the mast and have a smaller dimension at an end where the jib by means of the hinged connection is attached to the links.

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22. Equipment according to claim 20 or claim 21, where the links are made of a material lighter than steel.

23. Equipment according to any of the claims 18-22, where the jib
5 has an I-shaped cross section, alternatively an inverted T-shaped cross-section and that wheels of a trolley are intended for being supported on the transversal parts of the profile.

24. Wind turbine comprising

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a hub wherein the surface of said hub includes holes initially used for attaching the hub to a crane used when erecting the wind turbine, and

15 said holes subsequently intended for being used for securing service equipment including a crane according to any of claims 4-23 to the surface of the hub.

25. Wind turbine according to claim 24, wherein the surface of said
20 hub being provided with holes initially used for attaching the hub to a crane used, when erecting the wind turbine, and said holes subsequently intended for being used for securing service equipment to the surface of the hub.

26. Use of holes in the surface of a hub in a wind turbine according
25 to claim 24 and 25, said holes initially having been used for attaching the hub to a crane used, when erecting the wind turbine, and said holes subsequently used for securing service equipment to the surface of the hub.

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